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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/834,093 | 04/12/2001 | Paul M. Crivelli | 10006533-1 | 2770 |

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HEWLETT-PACKARD COMPANY
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| | |
|-------------------|--------------|
| EXAMINER | |
| HUFFMAN, JULIAN D | |
| ART UNIT | PAPER NUMBER |
| 2853 | |

DATE MAILED: 09/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/834,093

Applicant(s)

CRIVELLI ET AL.

Examiner

Julian D. Huffman

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-43 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-43 is/are allowed.
- 6) ☒ Claim(s) 21-25 and 29-35 is/are rejected.
- 7) ☒ Claim(s) 26-28, 36 and 37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-25 and 30-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishinaga et al.

Ishinaga et al. disclose a printing system comprising:

a printhead (fig. 9a) comprising a substrate including a plurality of ink ejection elements (3) that are arranged in N regions;

N region temperature sensors (2) that each sense a temperature of one of the N regions; and

a controller (fig. 33, element 70, column 26, lines 43-54) that adjusts a temperature of the substrate based upon an output of each of the N region temperature sensors;

a warming system that adjusts the temperature of the substrate in response to input from the controller (H1, H2, 8, column 24, lines 43-54);

wherein the warming system adjusts the temperature of the substrates by decreasing a temperature provided by the warming system (column 27, lines 14-19, column 30, lines 1-5);

wherein the warming system increases a temperature of the substrate prior to operation of the ink ejection elements (column 29, line 58-column 30, line 14);

wherein the controller allows operation of the plurality of ink ejection elements when the output of each of the N region temperature sensors is above a threshold (column 29, lines 58-68); and

wherein the controller maintains the temperature of the substrate within a predefined range from a starting point of a print swath to an ending point of a print swath (fig. 40, column 30, lines 1-14).

Ishinaga et al. also disclose:

means for sensing a temperature of the N regions (S1,S2);

means for adjusting a temperature of the substrate based on an output of the means for sensing the temperature of the N regions (CPU, 70);

means for warming the temperature of the substrate in response to input from the means for adjusting (H1,H2, 8, 5);

wherein the means for warming adjusts the temperature of the substrate by decreasing the temperature provided by the means for warming (column 27, lines 14-19, column 30, lines 1-5);

wherein the means for warming increases the temperature of the substrate prior to operation of the ink ejection elements (column 29, line 58-column 30, line 14); and

wherein the means for adjusting allows operation of the plurality of ink ejection elements when the output of the means for sensing is above a threshold (column 29, lines 58-68).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ishinaga et al.

Ishinaga et al. disclose everything claimed in the discussed embodiment, with the exception of ceasing operation of the ink ejection elements when the output of the N region temperature sensors is above a threshold.

In a separate embodiment, Ishinaga et al. disclose this feature (column 7, lines 40-50).

It would have been obvious to one having ordinary skill in the art at the time of the invention to incorporate the features of this embodiment into the main embodiment discussed above. The reason for doing such would have been to prevent damage to the recording head.

Allowable Subject Matter

5. Claims 38-43 are allowed.

Claims 26-28, 36 and 37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not disclose taking into consideration the pigment type of ink as claimed in the combination.

Response to Arguments

6. Applicant's argument that Ishinaga does not disclose multiple temperature sensors each for sensing a different region of the printhead has been considered and is respectfully deemed not persuasive. The Ishinaga reference, entitled Ink Jet Substrate Including Plural Temperature Sensors and Heaters, clearly shows two temperature sensors in fig. 9a for sensing different regions of the printhead substrate. column 26, lines 43-54 also describes how the sensors are used by the controller. The first sensor is placed in a first region near the ejectors 3 on one side of the printhead and the second sensor is placed in a second region on an opposite side of the printhead. Thus the sensors determine temperature of two different regions where different ejection elements are located.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian D. Huffman whose telephone number is (571)272-2147. The examiner can generally be reached Monday through Friday from 9:00 a.m. to 5:30 p.m.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier, can be reached at (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



JH

September 21, 2004


Thinh Nguyen
Primary Examiner
Technology Center 2800